DOCUMENT RESUME

ED 347 030 RC 018 722

AUTHOR Smith, Eldon D.
TITLE The Political Economy of Public Investments in Better Schools. Staff Paper No. 319.
INSTITUTION Kentucky Univ., Lexington. Dept. of Agricultural Economics.
SPONS AGENCY Southern Rural Development Center, Mississippi State, Miss.
PUB DATE Mar 92
NOTE 25p.
AVAILABLE FROM Department of Agricultural Economics, University of Kentucky, Lexington, KY 40546 (free).
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Economic Development; *Educational Benefits; *Educational Quality; Elementary Secondary Education; *Employment Opportunities; *Human Capital; Labor Market; *Parent Attitudes; *Parent Participation; Poverty; Public Policy; *Rural Education
IDENTIFIERS Education Economy Relationship; Kentucky

ABSTRACT

This study explores the proposition that, in less-developed rural areas, employers who provide greater employment opportunities for better educated persons might help communities break out of the vicious spiral caused by poverty-creating inefficiency in the use of public resources. Three hypothesis are advanced: (1) that, if good and extensive education is rewarded by better-paying and more stable local employment, local citizens might recognize more fully the rewards for good education and support efforts to enhance its quality; (2) that the quality of the human resources available within the community can be translated into the profit account of employers through lowered personnel costs; and (3) that in providing more opportunities for better-educated people, firms requiring larger complements of educated personnel infuse more families with educated adults into the community and help retain within the community educated persons who would otherwise have sought employment elsewhere. An exploratory case study of Pulaski County, Kentucky suggested that employers requiring higher percentages of educated personnel, participated in more school activities than employers requiring lower percentages of educated personnel. A telephone survey of parents of high school seniors in four Virginia and one Kentucky high school found: (1) parents' attitudes were not affected by an occupational environment which demonstrates the economic value of education perhaps due to the short experience; but (2) that parents with more schooling participated in more school activities than parents with less schooling. Appendix 1 provides a table of school support activities of selected major manufacturing and service producing employers in Pulaski County. Appendix 2 contains variables included in the Parent Participation Scale. (KS)

ED347030

Staff Papers

Staff Paper No. 319 March 1992

The Political Economy of Public Investments in Better Schools

by

Eldon D. Smith*

DEPARTMENT OF AGRICULTURAL ECONOMICS

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ACKNOWLEDGEMENTS

The project on which this paper is based was partially financed by the Southern Rural Development Center, Mississippi State, Mississippi. It involved a collaborative effort with Dr. Tom Johnson and his assistant, Mr.(now Dr.) David Broomhall, Department of Agricultural Economics, Virginia Polytechnic and State University. Part of the data on which this report is based was collected by Dr. Johnson and Mr. Broomhall, and the statistical model reported herein was computed by Mr. Broomhall following specifications of the author.

Gratitude is expressed to both the Southern Rural Development Center and my collaborators for their contributions. However, total responsibility for the analysis and interpretations is assumed by me. Neither has had an opportunity to review the manuscript in draft, nor have they commented on the specifications of the regression equation.

Preface

In the 38 years since my Ph.D. was awarded, I have rarely included a preface to any paper that I have written. This reflects my observation that they tend to be redundant, usually an account of why and how the paper came to be written, about which almost no one cares. In this case, I use it for quite a different purpose, to explain what might otherwise be regarded as a mere redundant duplication.

Candidly, about half of the empirical content of what follows was presented to the meetings of the North American Regional Science Association in New Orleans, Louisiana, November 10, 1991. It was delivered at a Sunday morning session near the end of the meeting.

Competing for a much diminished audience of people in various stages of recovery from tours of the French Quarter on the previous evening proved to be a formidable challenge. The problem was complicated further when a program featuring the now popular computing wizardry of Geographic Information Systems(GIS) was scheduled at the same hour and featuring, among others, no less than your President-Elect. GIS and Johnson won the day, and in a landslide! We had the opportunity to do a lot of what old men are noted for--talking to ourselves. And so it seemed to me that some degree of overlap would not be inappropriate. It will give you a basis for deciding whether you wish to request a copy of the final report of the study which will be published--if it is published--by the Southern Rural Development Center. As of this writing it is in process of review. If you choose to drum me out of the profession for this bit of unorthodoxy, you had best be about it--my mandated official retirement, the date when one becomes a professional non-person, is about 86 days hence!

My co-author of the report to the Southern Rural Development Center is Dr. Alan DeYoung, Department of Educational Policy Studies and Evaluation, University of Kentucky College of Education. He has had no part in the preparation of the paper which follows, although his analytical insights contributed much to it.

Contents

ACKNOWLEDGEMENTS.....i

PREFACE.....ii

INTRODUCTION.....1

MAJOR EMPLOYER POLICIES IN SUPPORT OF PUBLIC EDUCATION IN PULASKI COUNTY, KENTUCKY--An Exploratory Case Study.....3

Policy Differences Among Major Employers.....4

Interpretation.....5

DETERMINANTS OF PARTICIPATION BY PARENTS.....7

Data and Method of Analyis.....7

The Regression and Its Interpretation.....9

SUMMARY AND CONCLUSIONS.....11

References.....12

Appendix 1 School Support Activities of Selected Major Manufacturing and Services-Producing Employers in Pulaski County School Systems, 1990-1991 School Year.....13

Appendix 2 Variables Included in Parent Participation Scale.....14

INTRODUCTION

At this organization's meeting in 1988 I delivered paper on education in less-developed rural areas(Smith, 1989). It attempted to reconceptualize the factors at work in shaping public education and its utilization as a part of the dynamics of economic development. The purpose was to provide meaningful explanations of why in such regions the extent of education and rate of learning tend to be severely deficient. Exceptions exist, of course, most of them being found in municipal districts in which the population is usually more highly educated and affluent, but as a generalization it stands unchallenged(Office of Internal Administration, Kentucky Department of Education, 1990).

If educational inputs conform to the law of variable proportions, in these education-deficient areas the discounted marginal return to public and private investments in education should be even higher than the estimated handsome marginal returns to these inputs over the nation as a whole. These have been estimated by various authors over the last few decades(Becker, 1960)(Schultz, 1961, 1963) . The condition of under-investment has persisted for many decades, suggesting no tendency to equilibrate over the long term at levels which are sufficient to maximize the contribution of these investments to aggregate productivity. Why?

The hypothesis which was advanced was that the occupational composition of the workforce in such areas provided little direct evidence that returns to educational investments would, in fact, be high. For the educated to reap the rewards of investments of this kind in this situation would, in a majority of cases, require outmigration. Benefits of the investments in human capital are thereby externalized for the community, and are not demonstrably evident in such export-oriented labor markets. The income streams resulting from the local public component of investments are generated outside the community, thereby diminishing the incentive for communities to invest. In this event, a lower proportion of the return to these public investments would accrue to the public which provided them than would be true in communities with more opportunities for remunerative local employment for those who have educated themselves. The externalized benefits to community investments in education create the conditions for a long-term disequilibrium. But poor human resources beget classes of employers which do not require or reward good quality human resources in local markets. This results in underdeveloped human capital and high proportions in occupations which do not require highly-developed capabilities.

If this poverty-creating inefficiency in the public sector allocations of resources to produce human capital is to be broken, one or both of two things must occur. Investments must be determined by larger public units which, in the aggregate, receive the productivity benefits of such investments and whose voters have

in a majority of cases an evidential basis for understanding their productivity. Alternatively, a strategy of creating a short run dis-equilibrium may be required. I refer to one in which more local opportunities for those who acquire more learning is induced by selectively developing and recruiting employers with larger requirements for trained personnel. Subsidies in various guises, plus up-graded infrastructure designed to enhance the profitability of industries which would otherwise encounter locational disadvantages would be involved and would extend the existing bidding wars strategies to classes of industry with more demanding personnel requirements.

Institutionally, central control of the allocation of all such public resource investments and of the associated administration of schooling seems to be precluded politically. The site-based management notion attempts to meld an attempt to delegate to districts and individual schools with a system of accountability. Accountability is based on application of relatively imperfect measures of learning rates. This is required because these systems are, in most cases, predominantly financed by state and federal allocations.[1] In any case, the issue reduces to two major questions: (1)Would an increase in local opportunities for the more educated affect balances of political power such that more efficient and better-supported public education would occur? (2)Is it feasible to modify these opportunities through selective development of employment opportunities?

Selective recruiting and development which is focused on employers which provide greater opportunities for remunerative employment of the more educated might, if successful, help communities to break out of the old vicious spiral. By increasing the local demand for developed human resources, the externalized component of the income stream generated by greater local investments in education would be reduced. This and infusions of

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[1]The now popular site-based management concept of conditional delegation is an apparent recognition that the social, cultural and psychological complexities of the learning-teaching situation dictate creatively designed approaches. It is subject to generally mandated rates of learning achievement, specifically evaluation by standarized test scores, despite recognized fragilities and culture-specific biases in such instruments. In Kentucky a standardized testing system has been introduced as a check on occasional instances of deficient instruction in locally managed systems some of which are predominantly financed (90 percent or more) from state and federal sources.(Office of Internal Administration, Receipts and Expenditures, Fiscal Year 1988-89. Frankfort: Kentucky Dept. of Education.)(Legislative Research Commission. A Guide to the Kentucky Education Reform Act of 1990. Frankfort: Commonwealth of Kentucky, April 1990.

educated workers from outside the community would hypothetically shift power balances in favor of improved educational services.

Three classes of changes could transpire which would shift these power balances in favor of improved quality educational services. They are as follows:

1. If good and extensive education is rewarded by better-paying, and more stable local employment, local citizens might recognize more fully the rewards for good education and support efforts to enhance its quality. They would do so in order to enhance productivity of the local labor supply and returns to family and individual investments in schooling. With better schools, higher rates of learning per unit of time would occur, greater enhancement of future earnings, and greater private incentives to invest in more years of schooling. The derived demand for public investments would be greater and would be expressed socially and politically by greater support for school system progressiveness in its myriad aspects.

2. Since labor is imperfectly mobile, the quality of the human resources which are available within the community can be translated into the profit account of employers through lowered personnel costs. Beyond that, if some classes of personnel such as specialized and experienced managerial, technical and professional workers must be recruited externally, the quality of educational services in the community is likely to affect the cost of acquiring them. Educated people tend to prize good educational opportunities for their children. Plunkett and Bowman's 1973 study showed, in fact, that outsiders with similar education levels were more demanding in these regards than better-educated locals. Both in external recruitment of specialized categories of (in-mover) personnel which are not available locally and through enhancing supplies of qualified local personnel, costs of local employers with large complements of educated personnel will be reduced. Hence, there are important economic reasons for such employers to be interested in high quality local schools. Indeed, it may be a good investment for such employers to take appropriate action to buttress local school system improvements.

3. In providing more opportunities for better-educated people, firms requiring larger complements of educated personnel (1) infuse more families with educated adults into the community, and (2) retain within the community educated persons who would otherwise have sought employment elsewhere. Hence, if educated persons have experiences which lead them to value good educational opportunities for their children, the result will be an alteration of political and social power balances in favor of better schools. Moreover, the change will be greater than the proportion that these educated "elites" represent. Educated people usually have more highly developed social and communication skills than the uneducated.

These three general hypotheses guided exploratory studies of the possible effects of an altered occupational composition of the work force on the governance of school systems. It is through the systems of governance of the school system, both formal and informal, that desired improvements in the quality of educational services are given effect.[2]

MAJOR EMPLOYER POLICIES IN SUPPORT OF PUBLIC EDUCATION IN IN PULASKI COUNTY, KENTUCKY--AN EXPLORATORY CASE STUDY

Pulaski County, Kentucky has a population of almost 50,000, is located in the foothills of the Cumberland Plateau and once was among the poorer small scale farming counties in the region. Since the mid-1960's a Community College of the University of Kentucky, later a regional vocational-technical school and, most recently, a modern regional hospital and associated facilities have been established there. However, after 1970 and prior to the mid-1980's growth of the manufacturing sector waned. Most manufacturing jobs were in the stereotypical low wage industries--apparel, wood products, etc. Since 1980 Pulaski's county seat community of about 20,000, Somerset, has become a major regional services hub, its once important small farm sector having become relatively unimportant. Medical services employment has expanded to more than 20 times the 1960 employment level while population has grown by less than 50 percent.

Loss of a relatively major new, but labor-intensive employer precipitated in the 1980s a general re-appraisal of former policy. The result was a "tilt" in the direction of very selective recruiting of "industries which will do something for the community, rather than simply using what we already have."[3] The policy has met with some success. Three plants with very progressive and quite selective employment policy now operate in the community. Practically no employees in these new plants have less than secondary school equivalency, and relatively high proportions have some post-secondary education. In addition, the hospital and the major bank have high ratios of post-secondary educated personnel. In combination, they have increased the demand for well-schooled workers significantly. Several established plants

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[2]The force of social sanctions which in the Anglo-American system become formalized as a body of common law was conceptualized in the theories of property and transactions of John R. Commons in his The Legal Foundations of Capitalism, (New York: McMillan Company, 1924. Re-issued 1957 by University of Wisconsin Press) and other publications.

[3]Slight paraphrasing of comment by Mr. Hugh Hayden, Executive Director, Somerset-Pulaski County Industrial Foundation, December 1990.

anticipate more sophisticated technologies and are gearing personnel hiring policies and in-service training to the change in demand for educated workers which will result.

Policy Differences Among Major Employers

Officials of 6 manufacturing plants representing a broad spectrum of occupational structures were interviewed along with the personnel directors of the largest bank and the regional hospital. Each had over 100 employees. Estimates of proportions of employees occupying positions normally requiring some post-secondary schooling and proportions of total personnel having some post-secondary schooling (whether employed in a job requiring it or not) were obtained from each. A list of 11 possible activities indicative of support for schools or school-related activities were presented and each respondent was asked to indicate whether the firm had engaged in each of the activities during the previous year.

Proportions of employees in classes of occupations in which post-secondary schooling was required or highly advantageous ranged from a low of 4 percent(apparel) to a high of 75 percent(hospital). Proportions of all employees with post-secondary education ranged from 10 percent to 88 percent. Frequencies of positive responses to questions about school support activities are plotted against both proportions on Figure 1, and the responses to each item of education support activities of each employer are shown in Appendix 1.

The highly suggestive association is in no sense a definitively reliable one even for the size class of firms or size class of community which Pulaski County represents. And for very small establishments with, say, 20 or fewer employees, costs of some of these activities are high per employee and strictly business reasons for participation are more tenuous.

Among these establishments, even the limited participation of the apparel manufacturer was explained, in every case, by reference to its possible impact on either present or prospective economies in its operations. Idiosyncracies of local or parent company philosophy and perceptions govern policy to some extent. Never-the-less, no public relations or altruistic objective was noted by any respondent. This suggests that establishment behavior in relation to schools is mainly motivated by its business objectives, whether the effect on profit accounts is correctly perceived or not.

It is reasonable to suppose that relatively complex processes demand more capability to comprehend production and distribution processes on the part of the less-skilled categories of personnel as well as higher proportions in the more sophisticated categories. Therefore, it is not very surprising that those with high

proportions of occupations in the classes requiring post-secondary education also hired larger proportions of people with post-secondary schooling for production and materials handling positions.[4] This is illustrated by the increasing horizontal distance between the two plots for each employer. The dot (.) shows the proportion of employees in positions requiring advanced knowledge; the plus (+) is the proportion of employees with some post-secondary education in the same establishment.

Interpretation

While the evidence is suggestive, rather than definitive, it is consistent with the primary hypothesis. As corporate citizens, firms which demand more than a large complement of cheap unskilled labor are likely in their own self-interest to attempt to encourage and re-inforce public investments in school system improvements, or at least what they consider to be improvements. Aside from whether the specific activities in which they participate promote better instruction, the fact of participating in some education-related activity draws attention to the general interest of the employer in public education.

DETERMINANTS OF PARTICIPATION BY PARENTS

Corporate policies may directly affect efforts to improve public education. However, those employers which hire large proportions of educated employees have indirect effects on power balances relative to public education. They (1) retain within the community those who would have otherwise moved elsewhere in order to profit from their education, and (2) infuse into the community peoples who have been educated elsewhere. Such employees may choose to employ their power as individual citizens and parents independently from any overt policies of their employer respecting public education.

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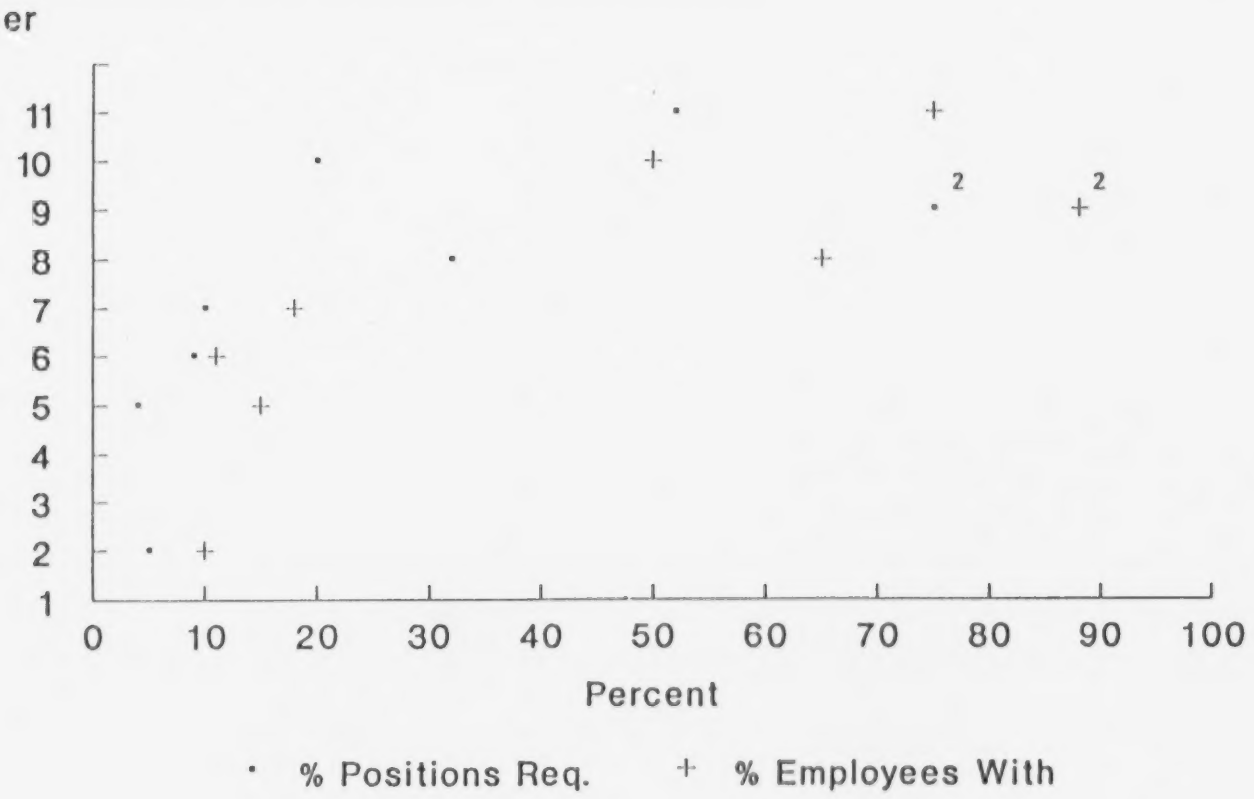
[4]The personnel policies of the Toyota assembly plant at Georgetown, Kentucky illustrate the point. Wage scales are significantly above most manufacturing firms, and significant proportions of college-trained workers have been hired for assembly-line operations positions, even some with masters degrees.

Figure 1: Number of Activities of Major Employers by Proportion of Employees with Post-Secondary Education and Proportion of Positions Requiring Post-Secondary Education. (1)



[1] Observations are for Pulaski County and/or Somerset Public Schools, i.e., total activities supported in one or both systems.

[2] Includes those hired with understanding that post secondary instruction will be required for retention. See Appendix Table 1.

Many prior studies of political behavior suggest that those who have become educated, for whatever reasons, tend to be relatively more active and influential politically than their less-schooled neighbors. It was hypothesized that this would be true of activities in support of enhanced quality educational services in their own community, and especially so if they had school-age children. However, those with educational credentials who had not experienced what psychologists term positive re-enforcements, especially remunerative and secure jobs, would be hypothetically less re-enforced. Hence, these workers would hypothetically tend to be less active as supporters of good education than those who had experienced substantial positive re-enforcements.

The hypothesis developed in my earlier paper was that less-educated persons who were exposed more intensively to demonstrations of the economic value of education in the workplace and in the community at large, would be more concerned about education for their children and the quality of education offered by the public school system than those who were not so exposed. A positive association between the proportion of higher skill positions in their workplace and the number of education support activities in which they participated would be consistent with this hypothesis. A similar association with the proportion of these classes of people in the broader community and participation in such activities would be consistent with the hypothesis as well.

Data and Method of Analysis

The data for this aspect of the study were collected in a broader telephone survey of parents of high school seniors in four Virginia and one Kentucky high school.[5] Parents were asked whether they had participated in each of seven different activities which were judged to be indicators of efforts to enhance the quality of education. The number of such activities in which they had participated was the dependent variable in a regression model.[6]

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[5]Dr. Tom Johnson and his assistant Mr. (now Dr.) David Broomhall designed the survey protocol and provided the computations following specifications of the author. Comments regarding the questionable adequacy of some of the data are no reflection on their efforts in this regard. The study proposal indicated that it would be a socalled pilot project, implicitly one in which these problems are recognized to be likely.

[6]No weights were assigned to take account of the possible differences in importance of the various activities. Hence, different combinations of activities were assumed to have similar value as participating events in the public control or governance of the system. Neither was any account taken of the intensity of activity. For example, a person who was in attendance at Parent-

Independent variables employed included the educational attainment of the responding parent, the class of occupation of the parent(0-7 on a scale based on anticipated earnings), a crude indicator of the relative proportion of persons in the workplace of the parents who occupied positions usually requiring post-secondary education (or in-service training to more sophisticated skills),[7] and a sample estimate of the relative proportion of such persons in the community as a whole. An estimate of road mile distance from the home to the school was designed to capture the effect of simple inconvenience of traveling to meetings, etc., on parent participation.

Linear and quadratic cross-product terms were computed for (1) occupational class and education, and (2) education and the two variables which attempt to capture the occupational environment of the workplace and community, respectively. The former reflected the hypothesis that those whose occupation was not commensurate with their education might view the importance of good education less positively than those who had profited from greater educational preparation. The latter two cross-product terms reflected the hypothesis that those who are more educated will have greater direct awareness of the value of education owing to their own experience. Accordingly, they will be less influenced by the concentrations of demonstrations of its value in the workplace and community than those with little education.

Teacher Organization meetings was assigned a value of 1.0 in the scale whether the president of the organization or an ordinary member. See Appendix 2 for the list of potential activities and the rationale for their selection.

[7]The class of occupation was a judgment for the aggregate of the occupational class of the parent. In manufacturing industries the lowest classes were unskilled or semi-skilled workers of the machine operator and materials handling category. These tended to predominate in these rural counties. In any event, this and, especially, the proportion of higher status occupations in the place of employment were extremely crude indicators. The latter was based on the occupational distribution of the workforce for two-digit SIC's for the nation, which are known to be biased and unreliable representations of individual establishments in particular regions. Hence, the probability of rejecting valid hypotheses with respect to them is high. So, also is the measure of the community wide occupational environment which is based entirely on the occupational distribution of responding parents relatively crude. Better data could obviously be provided in a study less constrained by time and resources, rather than an exploratory study with very limited financial support.

The Regression and Its Interpretation

Most of the variation in the measure of parent activity in support of schools is not explained by the regression. The two occupational environment variables are, respectively, non-significant and of a sign opposite to that hypothesized. Only the hypotheses relating to parent's education and the cross-product terms reflecting whether the parent has an occupation commensurate his/her education appear to be supported by the evidence(Table 1).

In the case of the workplace environment, there are several reasons for believing that the test was seriously flawed. In addition to the problem of non-cardinal 'measures' of both dependent and independent variable, the exposure to the work environment of the reported workplace might have been too short to importantly affect attitudes and behavior in this regard. The community occupational environment in having a significant negative sign is suggestive of correlation with a significant but unspecified variable. However, it is clear that we have no evidence which supports a conclusion that important shifts of attitude occur for citizen parents as a result of an occupational environment which demonstrates the economic value of education.

The coefficients for parent education and for the occupation class interaction with it are completely consistent with the hypotheses. Figures 2A and 2B explicate the meaning of the coefficients. Apparently, there is a positive influence of infusing or retaining educated persons in the community. On the basis of these coefficients a parent with 16 years of schooling would participate in 1.6 more activities than a parent with only 8 years in a position with average job status. However, those who have little education but a high status job tend to value education less highly, hence, participate in slightly fewer activities than those whose occupation is more commensurate with their education.

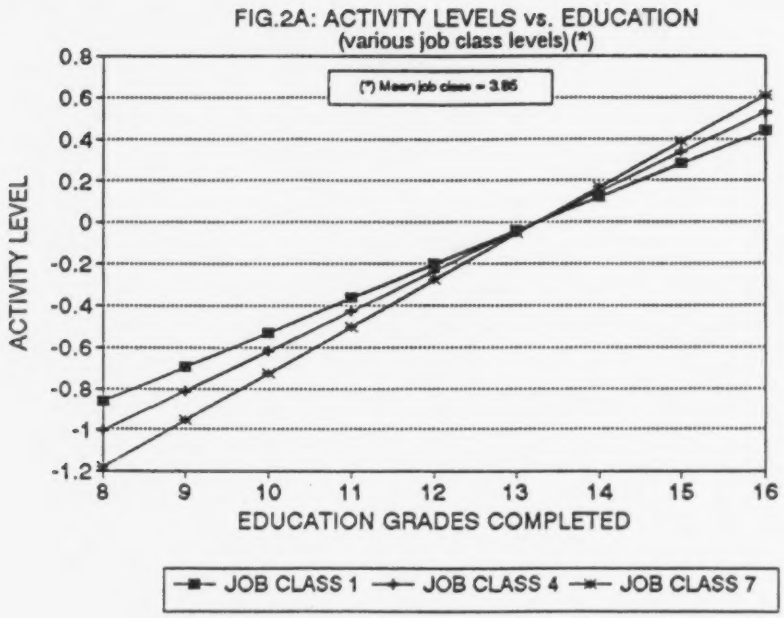
Travel distance appears to play an unimportant role in determining the participation level.

In addition, a mail-in survey of teachers in Pulaski County showed that three-fourths of the reporting teachers observed that parents who had moved into the community from areas outside the region were more supportive of good education than either returned former migrants or locals who had lived there continuously. This is generally consistent with the findings of Plunkett and Bowman's 1973 study in Appalachian Kentucky.

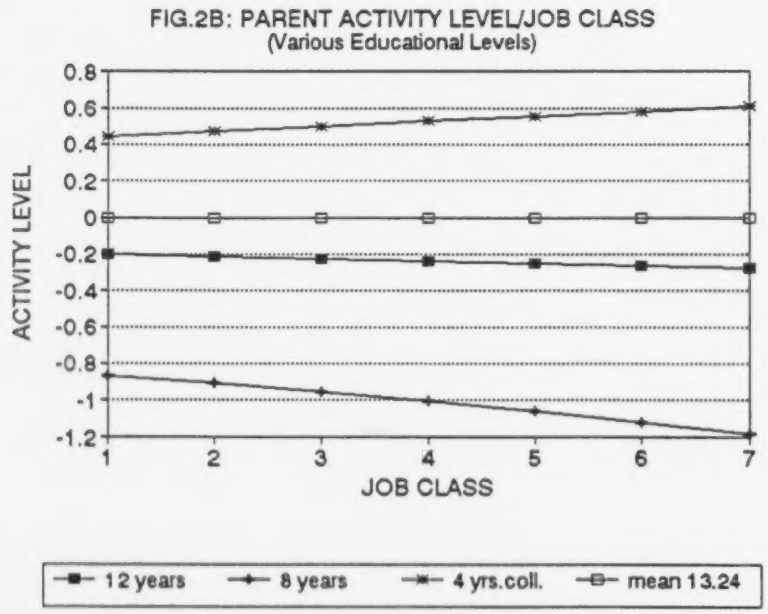
Table 1. Regression Statistics from Analysis of Determinants of Number of Parent Activities Categories in Support of Public Schools in which Parents Participated.

N=529 F=9.703 Prob.> 0.0001 R^2=0.158

Variable	Regr'n. Coeff't.	Standard Error	T	P
(1) Intercept	1.5562	0.16128	9.649	0.0001
(2) Parent Educat'n	0.1900	0.08051	2.360	0.0186
(3) (2)xJob Class	0.0100	0.00326	3.077	0.0022
(4) [(2)xJob Class]Squared	-0.000072	0.000063	-1.140	0.2549
(5) Prop.Jobs in SIC in High Job Class	-0.0131	0.02358	-0.553	0.5804
(6) Parent Educ.x(5)	0.0016	0.00185	0.840	0.4012
(7) [(2)x(5)]Squared	-0.0000015	0.000001	-0.1964	0.0500
(8) Prop. All Parents in School in High Job Class	3.7777	3.01581	1.253	0.2109
(9) Parent Educ.x(8)	0.3071	0.24158	1.271	0.2042
(10)[(2)x(9)]Squared	0.0083	0.01070	0.774	0.4395
(11)Distance Home to school(miles)	-0.0523	0.01937	-0.270	0.7871



Note: Activity levels are expressed as deviations from mean values associated with various education and job class values.



SUMMARY AND CONCLUSIONS

These provisional tidbits of evidence are generally supportive of the hypothesis that growth and recruitment of establishments with large complements of occupations requiring educated personnel will favorably impact support for public education. It will do so mainly through (1)direct efforts to encourage and aid efforts to improve instruction in schools, (2)by retaining within the community more people with significant educational qualifications and (3)by infusing non-natives with such qualifications into the community. It appears that non-natives are especially active supporters, or even demanders of good schools.

It is possible that the direct demonstrations in the community and workplace of the value of education may over a significant time-period affect attitudes of parents regarding the importance of good schools. However, having larger numbers of educated and affluent families in the community and in the workplace appear not to have affected the aspects of parent behavior incorporated into the dependent variable.

With the crude data and methods used in this study, an erroneous rejection of hypotheses regarding the influence on parent attitudes toward good schools of the community and workplace occupational environment cannot be ruled out. However, as the matter now stands there is no evidence which supports these hypotheses.

If this suggestive evidence proves to be indicative of more general and reliable relationships, the implication is that to employ the traditional job count criterion of success in economic development is to indulge in self-delusion. Growth does not equate to development. The growth of unskilled jobs without significant educational requirements may utilize present predominantly unskilled and deficiently-educated labor supplies, but it will contribute little, if anything, to public support for more and better education. In addition, international competition may well result in a decreasing set of opportunities to employ such workers, thereby increasing the economic contribution of education beyond levels which are now apparent. The large supplies of unskilled labor and rudimentary social perquisites and health and safety protections which are provided to workers in third world countries make them formidable competitors for unskilled labor-intensive manufacturing industries in the united states. Their future as employers is, accordingly, somewhat tenuous.

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Appendix 1 School Support Activities of Selected Major Manufacturing and Services Producing Employers in Pulaski County, Kentucky Systems, 1990-91 School Year.[1]

Activities	Employer Number							
	1	2	3	4	5	6	7	8
P=Pulaski County District; S=Somerset Independent District.								
Financial support or equipment for:								
Academic activities.		P,S	P,S	P,S	P,S	P,S	P,S	P,S
Athletics or other extra-curriculars.			P,S	S	P,S	P,S	P,S	P,S
Scholorships or awards for scholastic achievement.			P,S		P,S	P,S	P,S**	P,S
Academic competitions.			P,S			P,S	P,S	P,S
Direct personnel support by company officials, e.g., speakers, career days, etc.	P	P,S		S	P,S	P,S	P,S	P,S
Indirect Support through:								
Release time of employees for school support activities.	P,S*	P,S		P,S	P,S	P,S	P,S	P,S
Encouraged volunteer tutoring by employees.					P,S		P,S	P,S
Encouraged participation in Parent-Teacher Org.		P,S		P,S	P,S	P,S	P,S	P,S
Encouraged part. in band, etc.,"boosters".			P,S	P,S	P,S	P,S	P,S	P,S
Encouraged participation in fund raising activities.		P,S	P,S	P,S	P,S	P,S	P,S	P,S
Encouraged active support of Board of Education candidates who support school improvements.								P,S
Total number of classes of support activities	2	5	6	7	8	9	10	11
Proportion of employees with some post-secondary ed.	10%	15%	11%	18%	68%	88%***	50%	75%
Proportion of positions usually requiring post-secondary education or equivalent experience.[2]	5%	4%	9%	10%	32%	75%***	20%	52%

*Supervisory and administrative employees only. **Parent conglomerate provides scholorships. ***A high proportion, especially in this firm are hired without post-secondary instruction, as such, but with understanding that further instruction in relevant subjects will be required to insure retention. Most post-secondary instruction not degree-oriented.

[1]Information voluntarily released by employer representative without guarantee of confidentiality.

[2]Includes managerial, administrative, technical, professional and paraprofessional (plus technical secretaries) which normally require post-secondary formal instruction, or equivalent experience.

Appendix 2
Variables Included in Parent Participation Scale

Variables included in the scale were defined as follows:

1. Helped with school fund raiser.

2. Attended School Board or Supervisors meeting.

3. Attended P.T.A. (or P.T.S.A. or P.T.O.) meeting.

4. Attended an academic competition.

5. Attended a teacher conference about school work.

6. Visited son or daughter's classroom.

The rationale for inclusion of 5 and 6 is that if parents are sufficiently interested in the schooling of their children to engage in these activities, it will be apparent that they are likely to take other actions to express concerns about the quality of instruction if it appears to be deficient. These may vary from registering concerns through P.T.A. channels, to registering complaints with supervisory personnel and board members and overt actions to unseat board members if performance continues to be deficient to supportive efforts to address recognized problems over which teachers and supervisors have little control. I sum, an overtly interested parent may be a latent political threat, or a potential avenue of support for changes which will enhance performance.

A case can be made for inclusion of activities in support for programs without a specific academic orientation such as band, athletics, performing music, etc. Active participation can be viewed as exhibiting potential for action to achieve any objective, especially those which involve organizational aspects which can be put to other purposes. For various reasons to which the author is not privy, these were not included, and their inclusion or exclusion is a matter of judgment.

Educational programs of the Kentucky Cooperative Extension Service serve all people regardless of race, color, age, sex, religion, handicap, or national origin.